

REMARKS/ARGUMENTS

Claims 5-15 and 20-48 are pending. By this Amendment, the specification is amended, claim 30 is amended and claims 35-48 are added. Reconsideration in view of the above amendments and the following remarks is respectfully requested.

Claim 30 was objected to based on its dependency from canceled claim 16. By this Amendment, claim 30 has been amended so as to depend from claim 23.

In addition, in the specification is updated to include a cross reference to the priority application, i.e., this application claims the benefit of International Application No. PCT/IT2002/00632, filed October 3, 2002, incorporated herein by reference.

Claims 5-8, 10, 20-23, 25 and 31-34 were rejected under the ground of obviousness-type double patenting over claims 1-18 of U.S. Patent No. 7,100,496. The sole basis for rejecting the claims is as follows:

“Although the conflicting claims are not identical, they are not patentably distinct from each other because they are merely an obvious variation of the patented claims.”

See page 2 of the Office Action.

Such rationale does not establish a *prima facie* case for rejecting the claims based on obviousness-type double patenting. In particular, such an analysis requires a claim-by-claim, element-by-element analysis whereby the claims of the present application are compared to the claims of the issued patent. Such has not been done and the Examiner has therefore not satisfied his initial burden of presenting a *prima facie* case for rejecting the claims.

In addition, the current claims include subject matter which is not recited in the claims of the '496 patent. For example, claim 32 specifies that the collection device comprises at least

one piercing element having a substantially cylindrical engagement portion to pierce said cartridge in correspondence to said breaking line and to enter the cartridge so that an exterior side surface of the cylindrical engagement portion engages said outlet opening completely prior to dispensing a beverage. Furthermore, claim 32 specifies at least one delivery port that is positioned during beverage dispensing between the wall of the piercing element and an edge of the outlet opening and extends around the perimeter of the cylindrical engagement portion of the piercing element. Finally, claim 32 specifies that the ratio R between the diameter $D2$ of the engagement portion of the piercing member and the diameter $D1$ of the outlet opening is $1 \leq R \leq 1.067$. These features are not set forth in the claims of the 496 patent.

Accordingly, Applicant respectfully submits that the rejection is inappropriate and should be withdrawn.

Claims 5-15 and 20-34 were rejected under 35 U.S.C. § 103(a) over Fond (U.S. Patent No. 5,242,702) in view of Hu et al. (U.S. Patent No. 6,832,542), or in the alternative over Hu et al. in view of Fond. These rejections are respectfully traversed.

Each of independent claims 32 and 33 specifies that the ratio R between the diameter $D2$ of the engagement portion and the piercing member and the diameter $D1$ of the outlet opening is $1 \leq R \leq 1.067$. As such, the outlet opening defined by the groove or breaking line 21 in the bottom of the wall of the capsule is first opened by the piercing member 7, and immediately after the same opening is closed before water is fed to the cap, by the same piercing element. The outlet opening is closed because the piercing element has a diameter equal to or greater than the diameter of the opening. Thus, the application provides for opening the outlet, entering the outlet with the piercing member so as to close completely the outlet opening and subsequently feeding pressurized water until the bottom wall is deformed under pressure and a further opening

is created. This results in the beverage leaving the cartridge after the soluble product has dissolved and in reaching a sufficient pressure difference between the interior and the exterior of the cartridge to provide a very good amount of cream or foam in the final product, the foam having the required appearance (very small bubbles) and duration. The sequence and the related results can be beneficially obtained when if the piercing element and the outlet opening have diameters that fall within the claimed ratio ranged.

By contrast, Hu et al. discloses a system for opening a capsule in which contrary to the Examiner's assertion, the piercing member does not completely engage the outlet opening that has formed in the bottom wall of the capsule after water is fed and the bottom is deformed outwards.

Figures 4-8 are very clear and consistent in showing that the piercing member cannot enter into the outlet opening and therefore cannot engage the outlet before pressurized water is fed to the capsule. In fact, the only action required from the piercing member 4 is to oppose the deformation of the bottom of the wall and to open the outlet opening. Once the outlet has been opened, member 4 cannot close the opening again. According to the description, see, e.g., column 6, the piercing element 4 engages the outlet with a convex shaped surface. This does not appear to be correct because as soon as the pressure built inside the capsule is released, the bottom wall will return to the initial position, even if by a few millimeters only, and the surface of element 4 will not be able to engage the opening. Thus, no control of the beverage delivery can be obtained after the very first seconds from opening capsule.

Stated differently, Hu requires that a pressure is built into the capsule before the capsule is opened. See last paragraph at col. 4 of Hu US'542:

In another aspect, the invention relates to a method for

preparing a hot beverage using a capsule as previously mentioned comprising the step of providing such capsule, providing hot water entering the first surface and mixing the food substance with the water and build-up a pressure inside the capsule to prepare a beverage; providing a reaction force member for generating a reaction force from outside of the capsule and opening the second surface by applying said reaction force onto the openable member as a result of the building-up of inside pressure deforming said second surface.

In order to obtain this (col.14, lines 60-63):

The body 11 of the capsule is preferably constituted of a pressure resistant but elastically deformable material such as a thin, semi-rigid plastic material.

Col. 17, lines 27-31 reads:

At the end of the dispensing, the water stops entering the capsule and the plunger separates from the capsule as the capsule substantially or partially generally recovers its initial dimension due to the release of inside pressure. As the openable member has the ability to remain open, the beverage remaining inside the capsule can be fully discharged to the outlet.

Because member 4, or plunger 40, is wider than the opening in the bottom capsule wall, it will not enter the opened portion of the bottom wall of the capsule, but it will only push the openable member 20 and only the top portion of element 4, 40 will enter into the opening defined by line 26. However, there is no full engagement of the opening 26 and no mechanical (friction) interaction between member 4 or 40 and the opening.

The capsule is made of elastically deformable material and as soon as the pressure inside it drops, the capsule bottom wall will detach from the member 4, 40, and return to its initial position, at least partially (see above).

Initially there is a gap (0 to 5 mm) between the bottom wall and the member 4, 40, and this gap is reduced to zero by the pressure built up inside the capsule (col. 17 lines 1-13).

Therefore, once the capsule is opened the pressure will fall to almost ambient and the gap will appear again. A 0 mm gap still is a position in which member 4 does not enter the opening (in fact at 0 mm the capsule is still closed prior to feeding pressurized water to the capsule).

Fond discloses a capsule but has not outlet opening defined by grooves. The above remarks to Hu et al. apply in a similar manner to Fond in that the capsule is opened after pressurized water is fed to the capsule by means of injector 15 and the formed bottom wall is pierced by element 12. There is no way that the opening created by element 12 can be closed again by said element and, therefore, no control of the beverage delivery can be obtained. The claimed arrangement of a piercing member inside the cartridge and because of the ratio of the outlet opening and the piercing member diameters, controlled delivery can be achieved. The ratio of diameters ensures that an appropriate pressure is reached and that an appropriate opening is formed when the capsule is opened for the second time, i.e., after pressurized water is fed to the cartridge. The opening provides for the soluble product to be delivered for at least 75% of the total dispensing time so that there is a continued "action" on the product. Stated differently, all the product is forced through the narrow opening and the increased amount of cream/foam is obtained. Evidence of the results obtained by the claimed invention are set forth in the examples at pages 9 and 10 of the application.

In addition, in the Office Action, the Examiner kindly acknowledges that the claimed ratio set forth in independent claims 32 and 33 is not disclosed. However, the Examiner then takes the position that choosing the diameter in the claimed range is obvious since the claimed diameters are recognized as a result effective variable. However, such selection of the diameter of the piercing member relative to the punching line of the cartridge is not a recognized result-effective variable, contrary to what is said in the Office Action. In particular, the Examiner's

attention is directed to MPEP 2144.05 which states that "A particular parameter must first be recognized as a result effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum workable ranges of said variable might be characterized as routine experimentation". In the present case, the Examiner has not adduced any evidence which would indicate that the claimed ratio is a result effective variable. As such, it cannot be obvious to optimize such. In particular, the claimed range results in the many advantages described above, and in the original specification. See, for example, page 4, lines 19-27 of the original specification.

New claims 35-48 are presented for the examiner's consideration.

Reconsideration and withdrawal of the rejection are respectfully requested.

In view of the above amendments and remarks, Applicants respectfully submit that all the claims are patentable and that the entire application is in condition for allowance.

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140 under Order No. PTB-3687-273.

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Should the Examiner believe that anything further is desirable to place the application in better condition for allowance, he is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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